



Ref: 01-1735-01.014

July 19, 2006

Mr. Mark Verhey  
Humboldt County Department of Health and Human Services  
Division of Environmental Health  
100 H Street, Suite 100  
Eureka, CA 95501

**Re:    Quarterly Monitoring Data for May 2006  
                 Jackson's Garage, 630 Railroad Avenue, Blue Lake, California  
                 LOP #12014**

Dear Mr. Verhey:

On behalf of the Estate of Percy Jackson, Winzler & Kelly Consulting Engineers (Winzler & Kelly) is submitting quarterly monitoring data collected in May 2006 for the above-referenced site. As approved by the Humboldt County Department of Health and Human Services, Division of Environmental Health (HCDEH) in a letter dated January 12, 2005, the scope of the quarterly monitoring program has been reduced. The current quarterly groundwater monitoring program includes groundwater gradient calculations based on data from all monitoring wells and sampling of all monitoring wells except MW-2, MW-3, MW-4, and MW-9 until planned soil excavation activities are completed.

The purpose of this letter report is to document the activities, results, and findings of the quarterly monitoring program. All figures and tables referred to herein are included in Appendix A and Appendix B, respectively. Standard Operating Procedures (SOPs) are contained in Appendix C, Laboratory Analytical Reports are contained in Appendix D, field notes are contained in Appendix E, and waste disposal documentation is contained in Appendix F.

#### **Quarterly Monitoring Activities**

On May 25, 2005, a Winzler & Kelly technician obtained water levels from monitoring wells MW-2 through MW-13 in order to calculate groundwater gradient. MW-1 was not accessible. Eight (8) of the thirteen (13) site monitoring wells were then purged and sampled according to Winzler & Kelly SOPs for *Monitoring Well Purging and Sampling Activities* (Appendix D). Monitoring wells MW-2, MW-3, MW-4, and MW-9 were not sampled during this event. During purging, dissolved oxygen measurements, pH, temperature, and specific conductivity readings were also measured. Site vicinity, site plan, and groundwater gradient are shown on Figures 1 and 2, respectively (Appendix A).



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### Hydrographic Data

Depth to water measurements were collected after removing all well caps and allowing the wells to rest for at least 15 minutes. Cumulative water level measurements are presented in Table 1 (Appendix B). Depth to water and hydrographic parameters derived from well casing elevation and depth to water were determined in accordance with Winzler & Kelly SOPs (Appendix C).

The May 2005 groundwater gradient between the site monitoring wells excluding MW-1, was calculated using the multi linear regression method. Groundwater gradient was calculated to be 3.24 feet per 100 feet and is flowing in a west-southwesterly direction at 245.39° Azimuth (see Figure 2, Appendix A). The May 2006 gradient magnitude is consistent with the historical calculated groundwater gradient, which has ranged from 0.76 ft./100 ft. to 9.5 ft./100 ft between 1998 and the present. The west-southwesterly May 2006 groundwater gradient direction is within the range of historical directions of gradient, which have ranged from northwest to south-southwest, but are generally southwesterly. Table 2 (Appendix B) summarizes cumulative groundwater gradient calculations. Depth to water measurements were submitted electronically to the State Water Resources Control Board (SWRCB) Geotracker system on July 14, 2006.

### Water Sampling

On May 25 and May 26, 2006, eight (8) site monitoring wells were purged and sampled. MW-1 was not accessible. Monitoring wells MW-2, MW-3, MW-4, and MW-9 were not sampled. All monitoring well purging and sampling was performed in accordance with Winzler & Kelly SOPs (Appendix C). As standard procedure, measurements of dissolved oxygen, temperature, conductivity, and pH of purge water from each well are made to verify that equilibrium has been attained prior to sampling. Dissolved oxygen measurements collected at the site are shown in Table 3 (Appendix B). After purging at least three wetted casing volumes of water from each monitoring well, water level was allowed to recover to approximately 80% of its pre-purge level before sampling. Groundwater monitoring wells were sampled within 24 hours of purging. Field notes documenting water sampling activities and field measurements are contained in Appendix E.

During purging and sampling, petroleum odors and petroleum sheen were noted at MW-5, MW-7, and MW-8. Petroleum sheen but no petroleum odor was noted at MW-6. The only free phase floating product ever noted at the site was in monitoring well MW-1, during September through November 1998.

As part of the quarterly groundwater monitoring program, groundwater samples collected from the site monitoring wells were analyzed for the following:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA Method 5030/8021B;
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE) by EPA Method 5030/8021B;
- MTBE confirmed by EPA Method 8260, where detected by EPA Method 8021B.



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### Groundwater Analytical Results

One or more of the gasoline constituents TPH-G and BTEX were detected in groundwater samples collected from monitoring wells MW-5, MW-7, MW-8, MW-11, MW-12, and MW-13 during the May 2006 sampling event. The samples collected from monitoring wells MW-7 and MW-8 contained the highest concentrations of gasoline constituents with TPH-G at 5,200 parts per billion (ppb) and 44,000 ppb, respectively. Lower concentrations of gasoline constituents were detected in samples collected from MW-5. One or more of the BTEX constituents were detected in samples collected from MW-5, MW-7, MW-8, MW-11, MW-12, and MW-13 at concentrations up to 2,400 ppb benzene, 1,100 ppb toluene, 1,600 ppb ethylbenzene, and 4,710 ppb total xylenes.

Concentrations of MTBE were below laboratory detection limits for all groundwater samples collected at the site during the May 2006 sampling event.

Laboratory analytical results for the May 2006 sampling event were submitted electronically to the State Water Resources Control Board Geotracker System on July 14, 2006. Laboratory analytical results are presented in Table 4 (Appendix B). A copy of the laboratory analytical report is included in Appendix D.

### Quality Assurance/Quality Control (QA/QC)

Field QA/QC was provided by adherence to the Winzler & Kelly SOPs for "Monitor Well Purging and Sampling Activities", as contained in Appendix C. The travel blank was analyzed and all tested constituents were below laboratory detection limits.

Laboratory QA/QC was provided by the use of lab Method Blanks to preclude false positive analysis of analytes and the use of Laboratory Control Spike samples (LCS) and Laboratory Control Spike Duplicate (LCSD) to evaluate the percentage recovery of target analytes and reproducibility during analysis. The percentage of recovery for all analytes were within acceptable limits, except for the surrogate, which is noted below.

The laboratory provided the following comments regarding to the analyses performed:

#### *"TPH as Gasoline:*

Samples MW-5, MW-8, and MW-7 appear to be similar to gasoline but certain peak ratios are not that of a fresh gasoline standard. The reported results represent the amount of material in the gasoline range.

#### *BTEX:*

Some reporting limits for MTBE were raised for sample MW-5 due to matrix interference.



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Sample MW-8 was diluted and the reporting limits for MTBE was raised additionally due to matrix interference.

MTBE for sample MW-7 was reported as ND with a dilution due to matrix interference.

The surrogate recoveries for samples MW-12 and MW-13 were below the lower acceptance limit. The response of the reporting limit standard was such that the target analytes would have been detected even with the low recoveries; therefore, the data were accepted.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were below the lower acceptance limit for benzene. The LCSD recovery was also below the lower acceptance limit for ethylbenzene. The response of the reporting limit standard was such that the analytes would have been detected even with the low recovery; therefore the data were accepted.”

## Conclusions

- The groundwater gradient on May 25, 2006 was calculated at 3.24 feet per 100 feet and flowed in a west southwesterly direction at 245.39° Azimuth, consistent with previous calculations.
- High concentrations of various gasoline constituents are present in groundwater samples collected from monitoring wells MW-7 and MW-8 during the May 2006 sampling event.
- Lower concentrations of various gasoline constituents are present in groundwater samples collected from monitoring wells MW-5, MW-11, MW-12, and MW-13 during the May 2006 sampling event.
- Concentrations of all tested constituents were below laboratory detection limits in groundwater samples collected from monitoring wells MW-6 and MW-10 during the May 2006 sampling event.
- Samples were not collected from monitoring wells MW-1, MW-2, MW-3, MW-4, or MW-9 during this sampling event.
- MTBE was not detected in any of the groundwater samples; however, laboratory detection limits for MTBE were raised for the samples collected from MW-5.
- The next groundwater sampling event is scheduled for August 2006.



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If you have any questions or comments, please do not hesitate to call.

Sincerely,  
WINZLER & KELLY

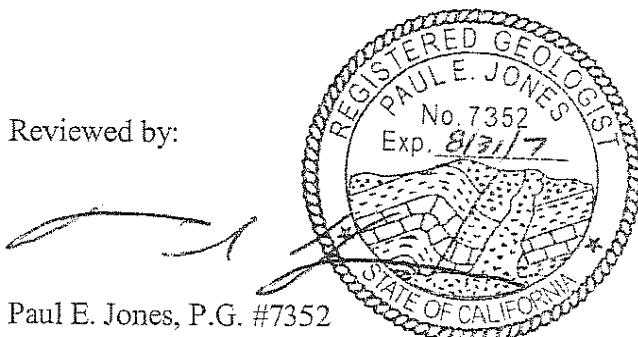
Prepared by:

A handwritten signature in black ink, appearing to read "Steve McDonald".

Steve McDonald  
Environmental Scientist

Reviewed by:

Paul E. Jones, P.G. #7352  
Associate Geologist



Enclosures: Appendix A: Figures

Figure 1 Vicinity Map

Figure 2 Site Plan and Groundwater Gradient Map

Appendix B: Tables

Table 1 Groundwater Measurements

Table 2 Groundwater Gradient Summary

Table 3 Dissolved Oxygen Measurements

Table 4 Groundwater Analytical Results

Appendix C: Standard Operating Procedures

Appendix D: Laboratory Analytical Reports

Appendix E: Field Notes

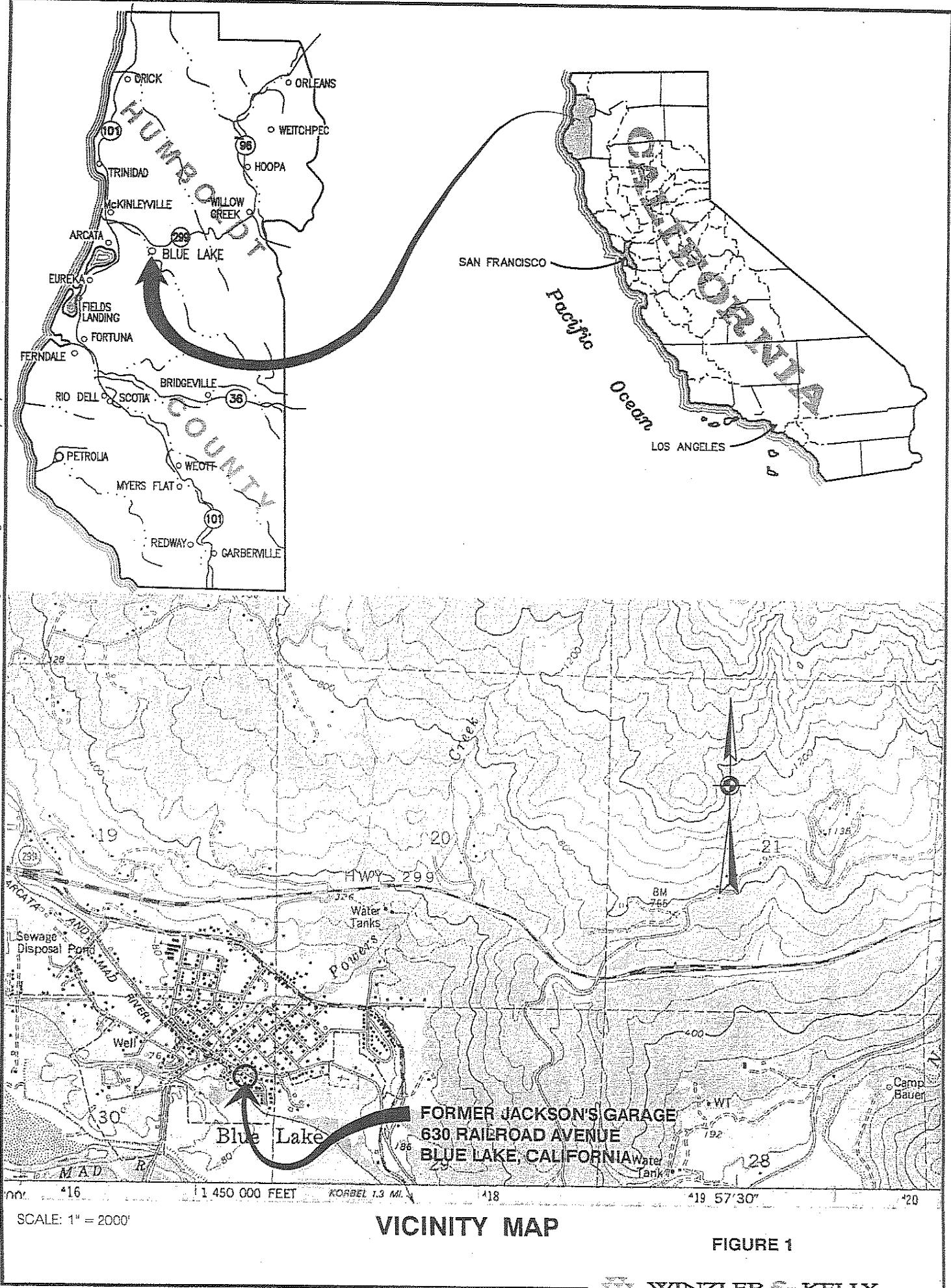
cc: Estate of Percy Jackson c/o Mr. Harry Jackson, 824 Florence Lane, Healdsburg, CA 95448  
Mr. Rocky Dorval, Professional Tree Service, 344 Chartin Road, Blue Lake, CA 95525

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## Appendix A Figures

4/26/2006 10:13 AM

J:\CAD\JOBS\2001\01173501\dwg\Phase014 Figure 1.dwg



**FIGURE 1**

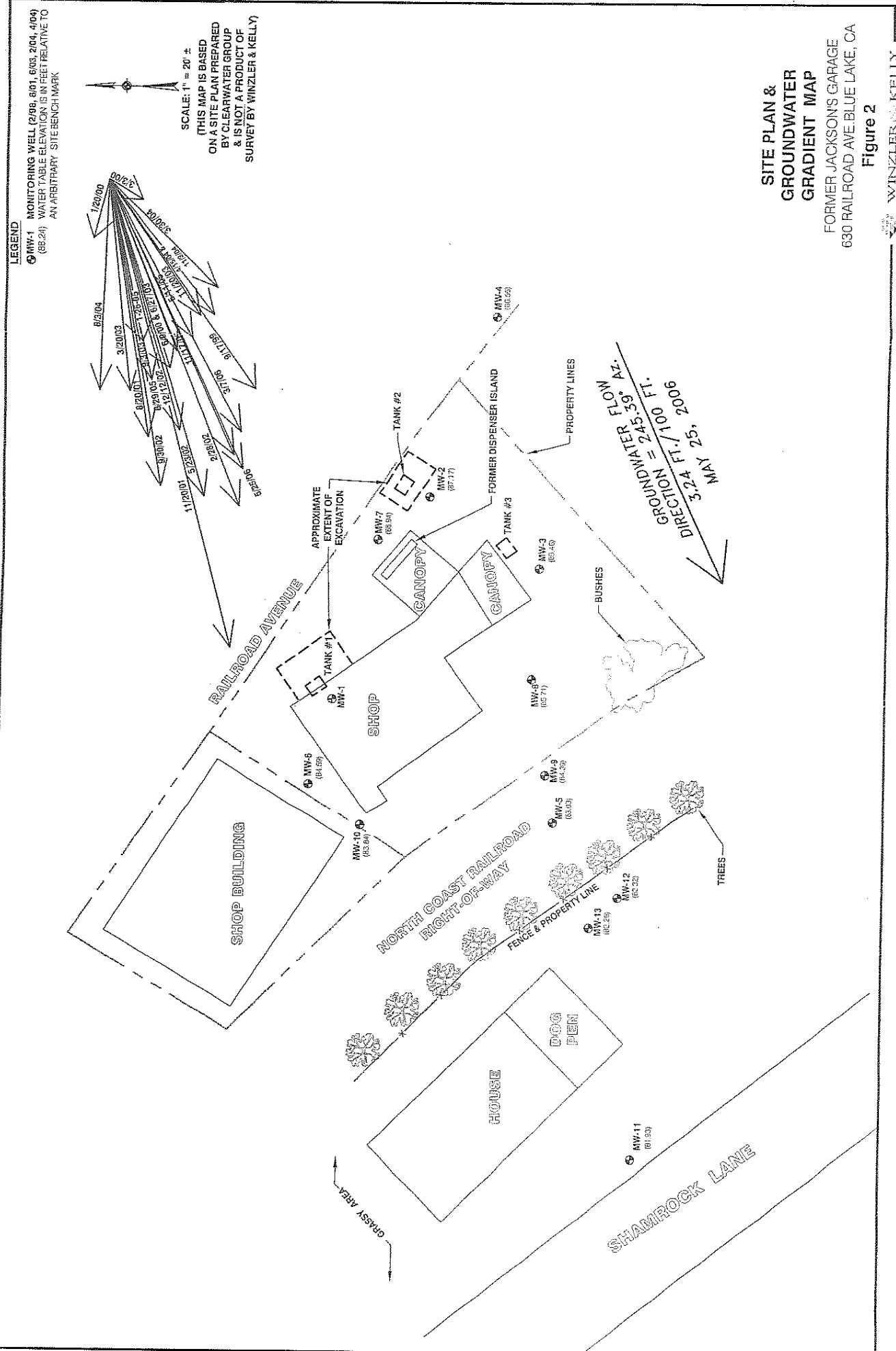


Figure 2

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**Appendix B  
Tables**

**TABLE 1**  
**GROUNDWATER MEASUREMENTS**  
Former Jackson's Garage, LOP #12014

Well Number	Date	Relative Groundwater Elevation (ft)	Relative Top of Casing (ft)	A Depth to Water (ft)	B Depth to Product (ft)	(A-B=C) Product Thickness (ft)	D Correction Factor ( $C \times 0.729^*$ )	A-D Equivalent Depth to Water (ft)
MW-1	19-Feb-98	87.83	90.93	3.10	None	0.00	0.00	3.10
	19-Mar-98	86.97	90.93	3.96	None	0.00	0.00	3.98
	25-Apr-98	86.72	90.93	4.21	None	0.00	0.00	4.21
	26-May-98	86.79	90.93	4.14	None	0.00	0.00	4.14
	15-Jun-98	86.67	90.93	4.26	None	0.00	0.00	4.26
	22-Jul-98	85.07	90.93	5.86	None	0.00	0.00	5.86
	04-Sep-98	82.33	90.93	8.61	None	0.02	0.01	8.60
	09-Oct-98	84.74	90.93	6.20	None	0.02	0.01	6.19
	10-Nov-98	84.93	90.93	6.01	None	0.01	0.01	6.00
	14-Dec-98	87.11	90.93	3.82	None	0.00	0.00	3.82
	12-Jan-99	87.57	90.93	3.35	None	0.00	0.00	3.35
	23-Feb-99	88.23	90.93	2.70	None	0.00	0.00	2.70
	26-Mar-99	87.28	90.93	3.65	None	0.00	0.00	3.65
	17-Sep-99	81.57	90.93	9.36	None	0.00	0.00	9.36
	20-Jan-00	87.67	90.93	3.26	None	0.00	0.00	3.26
	02-Mar-00	87.42	90.93	3.51	None	0.00	0.00	3.51
	09-Jun-00	86.00	90.93	5.93	None	0.00	0.00	5.93
	18-Sep-00	82.15	90.93	8.78	None	0.00	0.00	8.78
	20-Aug-01	81.77	90.93	9.16	None	0.00	0.00	9.16
	20-Nov-01	85.17	90.93	5.76	None	0.00	0.00	5.76
	28-Feb-02	87.23	90.93	3.70	None	0.00	0.00	3.70
	23-May-02	85.72	90.93	5.21	None	0.00	0.00	5.21
	30-Sep-02	81.33	90.93	9.60	None	0.00	0.00	9.60
	12-Dec-02	84.22	90.93	6.87	None	0.00	0.00	6.87
	20-Mar-03	87.26	90.93	3.67	None	0.00	0.00	3.67
	26-Jun-03	84.22	90.93	6.71	None	0.00	0.00	6.71
	03-Sep-03	82.10	90.93	8.83	None	0.00	0.00	8.83
	20-Nov-03	86.30	90.93	4.63	None	0.00	0.00	4.63
	30-Mar-04	87.22	90.93	3.71	None	0.00	0.00	3.71
	15-Apr-04	Water level not recorded due to access problems (car parked over well)						
	03-Aug-04	Water level not recorded due to access problems (car parked over well)						
	03-Nov-04	Water level not recorded due to access problems (car parked over well)						
	26-Jan-05	84.86	90.93	5.97	None	0.00	0.00	5.97
	11-May-05	87.73	90.93	3.20	None	0.00	0.00	3.20
	29-Aug-05	82.93	90.93	8.10	None	0.00	0.00	8.10
	17-Nov-05	Water level not recorded due to access problems (car parked over well)						
	07-Mar-06	Water level not recorded due to access problems (car parked over well)						
	25-May-06	Water level not recorded due to access problems (car parked over well)						
MW-2	19-Feb-98	88.82	91.08	2.26	None	0.00	0.00	2.25
	19-Mar-98	87.60	91.08	3.48	None	0.00	0.00	3.48
	25-Apr-98	87.36	91.08	3.72	None	0.00	0.00	3.72
	26-May-98	87.77	91.08	3.31	None	0.00	0.00	3.31
	15-Jun-98	87.85	91.08	3.43	None	0.00	0.00	3.43
	22-Jul-98	85.99	91.08	5.09	None	0.00	0.00	5.09
	04-Sep-98	83.10	91.08	7.68	None	0.00	0.00	7.68
	09-Oct-98	85.08	91.08	6.00	None	0.00	0.00	6.00
	10-Nov-98	85.16	91.08	5.92	None	0.00	0.00	5.92
	14-Dec-98	89.32	91.08	1.76	None	0.00	0.00	1.76
	12-Jan-99	89.43	91.08	1.65	None	0.00	0.00	1.65
	23-Feb-99	89.53	91.08	1.55	None	0.00	0.00	1.55
	26-Mar-99	88.78	91.08	2.30	None	0.00	0.00	2.30
	17-Sep-99	83.99	91.08	7.09	None	0.00	0.00	7.09
	20-Jan-00	89.19	91.08	1.93	None	0.00	0.00	1.93
	02-Mar-00	88.82	91.08	2.56	None	0.00	0.00	2.56
	09-Jun-00	88.67	91.08	4.41	None	0.00	0.00	4.41
	18-Sep-00	84.75	91.08	6.33	None	0.00	0.00	6.33
	20-Aug-01	84.06	91.08	7.02	None	0.00	0.00	7.02
	20-Nov-01	86.55	91.08	4.53	None	0.00	0.00	4.53
	28-Feb-02	83.51	91.08	2.57	None	0.00	0.00	2.57
	23-May-02	85.40	91.08	4.68	None	0.00	0.00	4.68
	30-Sep-02	84.04	91.08	7.04	None	0.00	0.00	7.04
	12-Dec-02	85.02	91.08	6.06	None	0.00	0.00	6.06
	20-Mar-03	88.00	91.08	3.08	None	0.00	0.00	3.08
	26-Jun-03	88.26	91.08	4.62	None	0.00	0.00	4.82
	03-Sep-03	84.67	91.08	6.41	None	0.00	0.00	6.41
	20-Nov-03	87.23	91.08	3.85	None	0.00	0.00	3.85
	30-Mar-04	87.81	91.08	3.27	None	0.00	0.00	3.27
	15-Apr-04	87.18	91.08	3.90	None	0.00	0.00	3.90
	03-Aug-04	85.30	91.08	5.78	None	0.00	0.00	5.78
	03-Nov-04	87.17	91.08	3.91	None	0.00	0.00	3.91
	26-Jan-05	87.56	91.08	3.52	None	0.00	0.00	3.52
	11-May-05	88.86	91.08	2.22	None	0.00	0.00	2.22
	29-Aug-05	85.19	91.08	5.89	None	0.00	0.00	5.89
	17-Nov-05	88.24	91.08	2.84	None	0.00	0.00	2.84
	07-Mar-06	89.23	91.08	1.85	None	0.00	0.00	1.85
	25-May-06	87.17	91.08	3.91	None	0.00	0.00	3.91
MW-3	19-Feb-98	89.29	89.97	0.68	None	0.00	0.00	0.68
	19-Mar-98	86.51	89.97	3.46	None	0.00	0.00	3.46
	25-Apr-98	86.06	89.97	3.91	None	0.00	0.00	3.91
	26-May-98	88.99	89.97	2.98	None	0.00	0.00	2.98
	15-Jun-98	86.86	89.97	3.11	None	0.00	0.00	3.11
	22-Jul-98	84.28	89.97	5.69	None	0.00	0.00	5.69
	04-Sep-98	82.98	89.97	6.99	None	0.00	0.00	6.99
	09-Oct-98	85.57	89.97	4.40	None	0.00	0.00	4.40
	10-Nov-98	85.95	89.97	4.02	None	0.00	0.00	4.02
	14-Dec-98	88.48	89.97	1.49	None	0.00	0.00	1.49
	12-Jan-99	86.63	89.97	1.34	None	0.00	0.00	1.34
	23-Feb-99	89.67	89.97	0.30	None	0.00	0.00	0.30

**TABLE 1**  
**GROUNDWATER MEASUREMENTS**  
Former Jackson's Garage, LOP #12014

Well Number	Date	Relative Groundwater Elevation (ft)	Relative Top of Casing (ft)	A Depth to Water (ft)	B Depth to Product (ft)	(A-B-C) Product Thickness (ft)	D Correction Factor (Cx 0.729*)	A-D Equivalent Depth to Water (ft)
MW-3	26-Mar-99	87.52	89.97	2.45	None	0.00	0.00	2.45
	17-Sep-99	82.30	89.97	7.67	None	0.00	0.00	7.67
	20-Jan-00	89.01	89.97	0.96	None	0.00	0.00	0.96
	02-Mar-00	88.09	89.97	1.88	None	0.00	0.00	1.88
	09-Jun-00	85.89	89.97	4.08	None	0.00	0.00	4.08
	18-Sep-00	83.52	89.97	6.45	None	0.00	0.00	6.45
	20-Aug-01	82.60	89.97	7.37	None	0.00	0.00	7.37
	20-Nov-01	86.72	89.97	3.25	None	0.00	0.00	3.25
	28-Feb-02	86.93	89.97	3.04	None	0.00	0.00	3.04
	23-May-02	85.71	89.97	4.26	None	0.00	0.00	4.26
	30-Sep-02	82.43	89.97	7.54	None	0.00	0.00	7.54
	12-Dec-02	86.45	89.97	3.61	None	0.00	0.00	3.61
	20-Mar-03	87.75	89.97	2.22	None	0.00	0.00	2.22
	26-Jun-03	85.35	89.97	4.61	None	0.00	0.00	4.61
	03-Sep-03	83.70	89.97	6.27	None	0.00	0.00	6.27
	20-Nov-03	86.90	89.97	3.07	None	0.00	0.00	3.07
	15-Apr-04	86.37	89.97	3.60	None	0.00	0.00	3.60
	03-Aug-04	84.65	89.97	5.32	None	0.00	0.00	5.32
	03-Nov-04	86.77	89.97	3.20	None	0.00	0.00	3.20
	26-Jan-05	86.26	89.97	3.71	None	0.00	0.00	3.71
	11-May-05	Water level not recorded due to access problems (car parked over well)						
	29-Aug-05	84.86	89.97	5.11	None	0.00	0.00	5.11
	17-Nov-05	86.95	89.97	3.02	None	0.00	0.00	3.02
	07-Mar-06	89.17	89.97	0.80	None	0.00	0.00	0.8
	25-May-06	86.46	89.97	3.51	None	0.00	0.00	3.51
MW-4	20-Aug-01	83.83	91.72	7.89	None	0.00	0.00	7.89
	20-Nov-01	86.17	91.72	5.55	None	0.00	0.00	5.55
	26-Feb-02	87.67	91.72	4.05	None	0.00	0.00	4.05
	23-May-02	86.16	91.72	5.56	None	0.00	0.00	5.56
	30-Sep-02	84.27	91.72	7.45	None	0.00	0.00	7.45
	12-Dec-02	85.30	91.72	6.42	None	0.00	0.00	6.42
	20-Mar-03	87.21	91.72	4.51	None	0.00	0.00	4.51
	26-Jun-03	86.07	91.72	5.65	None	0.00	0.00	5.65
	03-Sep-03	84.87	91.72	7.05	None	0.00	0.00	7.05
	20-Nov-03	86.72	91.72	5.00	None	0.00	0.00	5.00
	15-Apr-04	85.73	91.72	4.99	None	0.00	0.00	4.99
	03-Aug-04	85.35	91.72	6.37	None	0.00	0.00	6.37
	03-Nov-04	86.78	91.72	4.94	None	0.00	0.00	4.94
	26-Jan-05	85.48	91.72	5.24	None	0.00	0.00	5.24
	11-May-05	88.19	91.72	3.53	None	0.00	0.00	3.53
	29-Aug-05	84.81	91.72	6.91	None	0.00	0.00	6.91
	17-Nov-05	87.07	91.72	4.65	None	0.00	0.00	4.65
	07-Mar-06	88.46	91.72	3.27	None	0.00	0.00	3.27
	25-May-06	86.55	91.72	5.17	None	0.00	0.00	5.17
MW-5	20-Aug-01	79.89	88.00	8.11	None	0.00	0.00	8.11
	20-Nov-01	81.97	88.00	5.03	None	0.00	0.00	5.03
	28-Feb-02	83.58	88.00	4.42	None	0.00	0.00	4.42
	23-May-02	82.22	88.00	5.78	None	0.00	0.00	5.78
	30-Sep-02	79.54	88.00	8.46	None	0.00	0.00	8.46
	12-Dec-02	81.16	88.00	6.84	None	0.00	0.00	6.84
	20-Mar-03	84.66	88.00	3.34	None	0.00	0.00	3.34
	26-Jun-03	81.53	88.00	6.47	None	0.00	0.00	6.47
	03-Sep-03	80.09	88.00	7.91	None	0.00	0.00	7.91
	20-Nov-03	82.83	88.00	5.17	None	0.00	0.00	5.17
	15-Apr-04	83.43	88.00	4.57	None	0.00	0.00	4.57
	03-Aug-04	80.36	88.00	7.62	None	0.00	0.00	7.62
	03-Nov-04	83.45	88.00	4.55	None	0.00	0.00	4.55
	26-Jan-05	82.94	88.00	5.05	None	0.00	0.00	5.05
	11-May-05	85.41	88.00	2.59	None	0.00	0.00	2.59
	29-Aug-05	80.44	88.00	7.56	None	0.00	0.00	7.56
	17-Nov-05	83.63	88.00	4.37	None	0.00	0.00	4.37
	07-Mar-06	85.70	88.00	1.30	None	0.00	0.00	1.3
	25-May-06	83.03	88.00	4.97	None	0.00	0.00	4.97
MW-6	20-Aug-01	80.87	89.99	9.12	None	0.00	0.00	9.12
	20-Nov-01	83.98	89.99	6.01	None	0.00	0.00	6.01
	28-Feb-02	85.37	89.99	4.82	None	0.00	0.00	4.82
	23-May-02	82.44	89.99	7.35	None	0.00	0.00	7.35
	30-Sep-02	80.40	89.99	9.59	None	0.00	0.00	9.59
	12-Dec-02	83.99	89.99	6.00	None	0.00	0.00	6.00
	20-Mar-03	85.84	89.99	4.15	None	0.00	0.00	4.15
	26-Jun-03	82.75	89.99	7.24	None	0.00	0.00	7.24
	03-Sep-03	80.96	89.99	9.03	None	0.00	0.00	9.03
	20-Nov-03	84.92	89.99	5.07	None	0.00	0.00	5.07
	15-Apr-04	85.42	89.99	4.57	None	0.00	0.00	4.57
	03-Aug-04	81.09	89.99	8.90	None	0.00	0.00	8.90
	03-Nov-04	85.55	89.99	4.44	None	0.00	0.00	4.44
	26-Jan-05	84.10	89.99	5.89	None	0.00	0.00	5.89
	11-May-05	86.12	89.99	3.87	None	0.00	0.00	3.87
	29-Aug-05	81.47	89.99	8.52	None	0.00	0.00	8.52
	17-Nov-05	84.72	89.99	5.27	None	0.00	0.00	5.27
	07-Mar-06	87.45	89.99	2.54	None	0.00	0.00	2.54
	25-May-06	84.59	89.99	5.40	None	0.00	0.00	5.4
MW-7	20-Aug-01	83.64	90.91	7.27	None	0.00	0.00	7.27
	20-Nov-01	86.00	90.91	4.91	None	0.00	0.00	4.91
	28-Feb-02	87.63	90.91	3.28	None	0.00	0.00	3.28
	23-May-02	86.05	90.91	4.86	None	0.00	0.00	4.86
	30-Sep-02	83.52	90.91	7.39	None	0.00	0.00	7.39
	12-Dec-02	85.40	90.91	5.51	None	0.00	0.00	5.51

**TABLE 1**  
**GROUNDWATER MEASUREMENTS**  
Former Jackson's Garage, LOP #12014

Well Number	Date	Relative Groundwater Elevation (ft)	Relative Top of Casing (ft)	A Depth to Water (ft)	B Depth to Product (ft)	(A-B=C) Product Thickness (ft)	D Correction Factor ( $C \times 0.729^*$ )	A-D Equivalent Depth to Water (ft)
MW-7	20-Mar-03	87.81	90.91	3.30	None	0.00	0.00	3.30
	26-Jun-03	85.78	90.91	5.13	None	0.00	0.00	5.13
	03-Sep-03	84.19	90.91	6.72	None	0.00	0.00	6.72
	20-Nov-03	85.73	90.91	4.18	None	0.00	0.00	4.18
	15-Apr-04	86.66	90.91	4.05	None	0.00	0.00	4.05
	03-Aug-04	84.88	90.91	6.03	None	0.00	0.00	6.03
	03-Nov-04	Water level not recorded due to access problems (car parked over well)						
	28-Jan-05	85.94	90.91	3.97	None	0.00	0.00	3.97
	11-May-05	88.11	90.91	2.80	None	0.00	0.00	2.80
	29-Aug-05	84.86	90.91	6.05	None	0.00	0.00	6.05
	17-Nov-05	87.52	90.91	3.39	None	0.00	0.00	3.39
	07-Mar-06	88.54	90.91	2.37	None	0.00	0.00	2.37
	25-May-06	86.94	90.91	3.97	None	0.00	0.00	3.97
	MW-8							
MW-8	26-Jun-03	83.98	89.88	5.89	None	0.00	0.00	5.89
	03-Sep-03	82.27	89.88	7.61	None	0.00	0.00	7.61
	20-Nov-03	85.69	89.88	4.19	None	0.00	0.00	4.19
	15-Apr-04	86.39	89.88	3.49	None	0.00	0.00	3.49
	03-Aug-04	83.25	89.88	6.63	None	0.00	0.00	6.63
	03-Nov-04	86.81	89.88	3.07	None	0.00	0.00	3.07
	26-Jan-05	85.83	89.88	4.05	None	0.00	0.00	4.05
	11-May-05	88.50	89.88	1.38	None	0.00	0.00	1.38
	29-Aug-05	82.09	89.88	7.79	None	0.00	0.00	7.79
	17-Nov-05	Water level not recorded due to access problems (woodpile over well)						
	07-Mar-06	88.39	89.88	1.49	None	0.00	0.00	1.49
	25-May-06	85.71	89.88	4.17	None	0.00	0.00	4.17
MW-9	26-Jun-03	82.72	89.39	6.67	None	0.00	0.00	6.67
	03-Sep-03	80.91	89.39	8.48	None	0.00	0.00	8.48
	20-Nov-03	84.73	89.39	4.66	None	0.00	0.00	4.66
	15-Apr-04	86.56	89.39	3.83	None	0.00	0.00	3.83
	03-Aug-04	81.23	89.39	8.14	None	0.00	0.00	8.14
	03-Nov-04	85.89	89.39	3.50	None	0.00	0.00	3.50
	28-Jan-05	84.75	89.39	4.64	None	0.00	0.00	4.64
	11-May-05	87.59	89.39	1.80	None	0.00	0.00	1.80
	29-Aug-05	81.38	89.39	8.01	None	0.00	0.00	8.01
	17-Nov-05	85.44	89.39	3.95	None	0.00	0.00	3.95
	07-Mar-06	88.52	89.39	0.87	None	0.00	0.00	0.87
	25-May-06	84.39	89.39	5.00	None	0.00	0.00	5.00
MW-10	15-Apr-04	84.73	89.24	4.51	None	0.00	0.00	4.51
	03-Aug-04	80.63	89.24	8.61	None	0.00	0.00	8.61
	03-Nov-04	85.07	89.24	4.17	None	0.00	0.00	4.17
	26-Jan-05	83.40	89.24	5.84	None	0.00	0.00	5.84
	11-May-05	85.57	89.24	3.67	None	0.00	0.00	3.67
	29-Aug-05	81.05	89.24	8.19	None	0.00	0.00	8.19
	17-Nov-05	83.99	89.24	5.25	None	0.00	0.00	5.25
	07-Mar-06	86.93	89.24	2.31	None	0.00	0.00	2.31
	25-May-06	83.84	89.24	5.40	None	0.00	0.00	5.4
	MW-11							
MW-11	15-Apr-04	82.07	87.04	4.97	None	0.00	0.00	4.97
	03-Aug-04	78.95	87.04	8.09	None	0.00	0.00	8.09
	03-Nov-04	82.02	87.04	5.02	None	0.00	0.00	5.02
	26-Jan-05	81.95	87.04	5.08	None	0.00	0.00	5.09
	11-May-05	82.87	87.04	4.17	None	0.00	0.00	4.17
	23-Aug-05	78.30	87.04	9.74	None	0.00	0.00	8.74
	17-Nov-05	82.11	87.04	4.93	None	0.00	0.00	4.93
	07-Mar-06	84.10	87.04	2.94	None	0.00	0.00	2.94
	25-May-06	81.93	87.04	5.11	None	0.00	0.00	5.11
	MW-12							
MW-12	15-Apr-04	82.47	87.34	4.87	None	0.00	0.00	4.87
	03-Aug-04	79.90	87.34	7.44	None	0.00	0.00	7.44
	03-Nov-04	82.57	87.34	4.77	None	0.00	0.00	4.77
	26-Jan-05	82.22	87.34	5.12	None	0.00	0.00	5.12
	11-May-05	83.34	87.34	4.00	None	0.00	0.00	4.00
	29-Aug-05	79.95	87.34	7.39	None	0.00	0.00	7.39
	17-Nov-05	82.46	87.34	4.88	None	0.00	0.00	4.88
	07-Mar-06	84.82	87.34	2.52	None	0.00	0.00	2.52
	25-May-06	82.32	87.34	5.02	None	0.00	0.00	5.02
	MW-13							
MW-13	15-Apr-04	82.47	87.39	4.92	None	0.00	0.00	4.92
	03-Aug-04	79.77	87.39	7.62	None	0.00	0.00	7.62
	03-Nov-04	82.56	87.39	4.83	None	0.00	0.00	4.83
	26-Jan-05	82.18	87.39	5.21	None	0.00	0.00	5.21
	11-May-05	83.32	87.39	4.07	None	0.00	0.00	4.07
	29-Aug-05	79.89	87.39	7.50	None	0.00	0.00	7.50
	17-Nov-05	82.42	87.39	4.97	None	0.00	0.00	4.97
	07-Mar-06	84.82	87.39	2.57	None	0.00	0.00	2.57
	25-May-06	82.28	87.39	5.11	None	0.00	0.00	5.11

\*0.729 is the density of gasoline at 15°C as referenced in the API Publication 1626, Second Edition, August, 1989

**TABLE 2**  
**GROUNDWATER GRADIENT SUMMARY**  
**Former Jackson's Garage, LOP #12014**

Date	Gradient Direction (Compass Direction or Degrees Azimuth)	Gradient Magnitude (ft./ 100 ft.)
5/22/1998	Southwest	3.1
6/15/1998	Southwest	3.1
7/22/1998	Southwest	6.1
8/22/1998	Southwest	6.1
9/4/1998	West Southwest	2.4
10/9/1998	North	1.9
11/10/1998	North Northeast	0.9
12/14/1998	West	4.8
1/12/1999	Northwest	2.7
2/23/1999	Southwest	4.2
3/26/1999	Southwest	5
9/17/1999	235	5
1/20/2000	284	1.2
3/3/2000	210	0.76
6/9/2000	252	3.9
8/20/2001	261.52	5.1
11/20/2001	255	9.5
2/28/2002	248	6.9
5/23/2002	253	6.5
9/30/2002	260	6.1
12/12/2002	259	5.1
3/20/2003	264	4.18
6/27/2003	252.17	3.93
9/3/2003	259.43	4.04
11/20/2003	236.8	3.21
3/30/2004	225.99	2.99
4/15/2004	232.21	3.35
8/3/2004	272.24	4.15
11/3/2004	231.89	3.4
1/25/2005	257.91	3.26
5/11/2005	242.11	3.52
8/29/2005	257.75	4.03
11/17/2005	248.30	3.63
3/7/2006	242.22	2.93
5/25/2006	245.39	3.24

NOTE: Gradient calculations before August 2001 were prepared by other firms and are based only on three wells.

August 2001 through November 2003 gradients were calculated based on either 7 or 9 wells.

March 2004, November 2004, and November 2005 gradient were calculated based on 11 wells.

April 2004, May 2005, March 2006, and May 2006 calculations were based on 12 wells.

January and August 2005 calculations were based on 13 wells.

**Table 3**  
**DISSOLVED OXYGEN SUMMARY**  
**Former Jackson's Garage, LOP # 12014**  
**All units reported in mg/L**

Date	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13
8/21/2001	0.1	0.1	0.2	4.7	2.1	0.1	2.8	NA	NA	NA	NA	NA	NA
11/20/2001	0	3.3	0.8	0.3	0.6	0.6	0	NA	NA	NA	NA	NA	NA
2/24/2002	1.3	2.1	2	1.5	2	3	1.8	NA	NA	NA	NA	NA	NA
5/23/2002	1.2	1.9	1.2	1.7	1.4	1.6	8.7	NA	NA	NA	NA	NA	NA
9/30/2002	NA	NA	NA	NA									
12/12/2002	NA	12	8	8	8.3	8.2	8.1	NA	NA	NA	NA	NA	NA
3/20/2003	0	1.9	0.1	0.6	0.1	0.1	0.1	NA	NA	NA	NA	NA	NA
6/27/2003	NA	NA	NA	NA									
9/3/2003	6.2	8.4	8.7	3.5	3.3	3.3	6.2	2.6	2.6	2.9	NA	NA	NA
11/20/2003	1.1	4.6	2	2.7	1.8	3.8	1.3	1.3	1.9	NA	NA	NA	NA
3/30/2004	2.4	6.7	2.4	3.6	3.2	12.9	2	2.4	1.1	1.1	5.5	NA	NA
8/3/2004	NA	0.9	1.2	1.5	1.2	1.2	1.1	1.2	1.2	0.8	0.8	1.1	1.4
11/3/2004	NA	1.7	0.7	2.8	0.8	2.4	NA	0.8	0.8	1.5	1.7	0.8	1.2
1/26/2005	1.1	1.6	1.7	1.3	0.9	1.9	1.6	1.3	1.5	1.5	2.1	1.7	1.3
5/16/2005	3.3	3.4	NA	2.4	1.5	0.4	1	2.8	1.6	2.8	2.4	1.8	1.5
8/29/2005	NA	NA	NA	NA	1.1	3.0	0.6	0.4	NA	1.6	4.7	1.8	1.6
11/17/2005	NA	4.5	0.2	2.0	5.1	2.1	1.7	NA	0.5	5.7	4.3	1.0	3.0
3/7/2006	NA	NA	NA	1.1	6.2	0.9	0.8	NA	1.3	3.5	1.3	1.8	1.8
5/25/2006	NA	0.4	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.8	0.2	0.2

NA denotes Not Analyzed

TABLE 4  
GROUNDWATER ANALYTICAL RESULTS  
Former Jackson's Garage, LOP #12014  
(All units reported in parts per billion)

Well ID	Sample Date	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	(MTBE) Methyl Tertiary Butyl Ether (ppb)	(DPE) Di-isopropyl Ether	(ETBE) Ethyl Tertiary Butyl Ether	(TAME) Tertiary Amyl Methyl Ether	(TBAB) Tertiary Butyl Alcohol	Methanol	Ethanol	Chlorinated Hydrocarbons (3010) - ppb	DCA 15	Lead
MW-1	19-Feb-98	35,000	4,500	2,200	2,010	5,600	450	<250	NA	NA	NA	NA	NA	NA	<10	NA
	26-May-98	55,000	4,500	2,350	1,900	5,600	450	<250	NA	NA	NA	NA	NA	NA	NA	NA
	4-Sep-98					Sample not analyzed due to presence of 0.02 foot free product										
	14-Dec-98	59,000	3,400	1,300	1,800	4,750	340	10A	NA	NA	NA	NA	NA	NA	NA	NA
	26-Mar-99	41,000	4,100	1,200	1,700	3,600	560	NA	NA	NA	NA	NA	NA	NA	NA	NA
	17-Sep-99	35,000	3,200	500	1,600	2,880	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Jan-00	53,000	46,500	1,700	2,200	5,880	<20	ND	ND	ND	ND	ND	ND	ND	ND	NA
	2-Mar-00	67,000	4,800	1,300	2,400	6,000	<20	ND	ND	ND	ND	ND	ND	ND	ND	NA
	9-Jun-00	39,400	3,310	833	1,890	4,210	<10	ND	ND	ND	ND	ND	ND	ND	ND	NA
	21-Aug-01	27,000	2,000	340	1,200	2,400	<10	ND	<10	<10	<10	<10	<10	<10	<100	NA
	21-Nov-01	38,000	3,600	2,100	2,100	4,800	<20	ND	<20	<20	<20	<20	<20	<20	<200	NA
	28-Feb-02	38,000	3,600	760	1,300	3,930	<15	ND	<30	<30	<30	<30	<30	<30	<50	NA
	23-May-02	23,000	2,900	460	1,200	2,130	<10	ND	<20	<20	<20	<20	<20	<20	<50	NA
	30-Sep-02	18,000	2,000	270	910	1,540	<10	ND	<20	<20	<20	<20	<20	<20	<200	76
	12-Dec-02	29,000	2,400	600	1,400	3,320	<15	ND	<30	<30	<30	<30	<30	<30	<50	NA
	20-Mar-03	34,000	3,300	930	1,800	3,700	<20	ND	<40	<40	<40	<40	<40	<40	<50	NA
	27-Jun-03	13,000	3,000	340	650	1,150	<650	ND	NA	NA	NA	NA	NA	NA	<50	NA
	3-Sep-03	12,000	1,900	310	580	1,090	<150	ND	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	44,000	3,800	1,200	2,200	4,100	<3,000	ND	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	30,000	3,100	650	1,500	3,070	<1,200	ND	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04															
	4-Nov-04															
	26-Jan-05	54,000	3,800	940	1,360	3,590	<100	ND	<300	<300	<300	<300	<300	<300	<60	NA
	12-May-05	28,000	3,700	600	1,500	2,410										NA
	29-Aug-05															NA
	16-Nov-05															NA
	9-Mar-06															NA
	26-May-06															
MW-2	19-Feb-98	3900	340	110	100	420	38	NA	NA	NA	NA	NA	NA	NA	NA	60
	26-May-98	7300	58	160	350	536	<100	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Sep-98	1300	250	70	760	290	<5	NA	NA	NA	NA	NA	NA	NA	NA	NA
	14-Dec-98	<50	<50	<50	<50	<50	<50	ND	ND	ND	ND	ND	ND	ND	ND	ND
	26-Mar-99	<50	<50	<50	<50	<50	<50	ND	ND	ND	ND	ND	ND	ND	ND	ND
	17-Sep-99	820	46	51	32.2	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Jan-00	<50	0.56	<0.5	1	0.6	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2-Mar-00	<50	<50	<50	0.6	<0.5	<3	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9-Jun-00	800	14	14.7	40.9	58.8	<2	ND	ND	ND	ND	ND	ND	ND	<0.50	NA
	20-Aug-01	110	2	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
	21-Nov-01	1000	11	13	24	47	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
	28-Feb-02	1200	12	23	51	105	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	NA
	23-May-02	230	3.5	4.4	11	18.5	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	NA
	30-Sep-02	480	2.2	<0.50	2.5	1.6	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	NA
	12-Dec-02	130	7.3	6.3	4.9	8.8	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	NA
	20-Mar-03	1300	9.7	33	52	150	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	NA
	27-Jun-03	380	5.4	313	12	23.7	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3-Sep-03	<50	0.96	1	1.1	3.6	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	210	<0.50	<3.0	3.0	12.2	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	3,500	13	<26	54	153	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	3,800	61	120	200	500	<20	NA	NA	NA	NA	NA	NA	NA	NA	NA

Samples collected during this event froze at the laboratory and therefore were not analyzed.

TABLE 4  
GROUNDWATER ANALYTICAL RESULTS  
Former Jackson's Garage, LOP #12014  
(All units reported in parts per billion)

Well ID	Sample Date	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	(MTBE) Methyl Tertiary Butyl Ether (ppb)	(DPE) Di-isopropyl Ether (ppb)	(E BE) Ethyl Tertiary Butyl Ether (ppb)	(TAME) Tertiary Amyl Methyl Ether (ppb)	(TBBA) Tertiary Butyl Alcohol (ppb)	Methanol (ppb)	Ethanol (ppb)	Chlorinated Hydrocarbons (80101) - ppb	Lead
MW-3	19-Feb-98	29,000	250	940	350	1,800	200	NA	NA	NA	NA	NA	NA	NA	<40
	26-May-98	3,000	26	220	46	313	<100	NA	NA	NA	NA	NA	NA	NA	TCE 4
	4-Sep-98	9,700	210	290	250	406	200	NA	NA	NA	NA	NA	NA	NA	NA
	14-Dec-98	210	10	7	4	17	<5	NA	NA	NA	NA	NA	NA	NA	NA
	26-Mar-99	6000	59	510	110	730	100	NA	NA	NA	NA	NA	NA	NA	NA
	17-Sep-99	916	100	18	10	46	4.4	NA	NA	NA	NA	NA	NA	NA	NA
	20-Jan-00	1,300	22	99	13	272	<1	ND	ND	ND	ND	ND	ND	ND	NA
	2-Mar-00	760	7.2	64	8.6	165	<0.50	ND	ND	ND	ND	ND	ND	ND	NA
	9-Jun-00	269	4.92	4.4	3.1	16	<2	ND	ND	ND	ND	ND	ND	ND	NA
	20-Aug-01	1,300	1.5	<0.6	13	5	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<40
	21-Nov-01	350	<0.50	24	2.8	160	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
	28-Feb-02	150	<0.50	2.2	0.97	35	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<15*
	23-May-02	<50	1.2	<0.50	0.50	1.7	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<10*
	30-Sep-02	400	1.4	<0.50	0.99	0.55	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10*
	12-Dec-02	<50	<0.50	<0.50	0.5	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	20-Mar-03	<50	<0.50	<0.50	4.9	0.85	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	27-Jun-03	1.0	<0.50	<0.50	0.50	0.50	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3-Sep-03	78	7.8	2.3	2.2	6.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	<50	<0.50	<0.50	<1.0	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	1-Apr-04	<50	<0.50	<0.50	<1.0	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	200	7.1	2.2	1.5	2.88	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	<50	1.1	<0.50	<1.50	0.72	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	20-Aug-01	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	21-Nov-01	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	28-Feb-02	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	23-May-02	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	30-Sep-02	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	12-Dec-02	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	20-Mar-03	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	27-Jun-03	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	3-Sep-03	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	20-Nov-03	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	31-Mar-04	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	3-Aug-04	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	4-Nov-04	<50	<0.50	<0.50	<1.0	<1.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0
	20-Aug-01	880	160	2.4	4	3.3	2.3	0.94	<0.50	0.64	9.7	<50	<50	<50	<5.0
	21-Nov-01	1600	160	3.2	1.1	3.5	1.5	0.5	<0.50	0.6	R.7	91	<5.0	<5.0	<5.0
	28-Feb-02	2300	110	9.5	9.9	32.2	0.68	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	23-May-02	6,000	340	24	270	65.3	<1.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
	30-Sep-02	2,800	400	6.1	65	11.6	<2.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	12-Dec-02	4,100	360	18	140	84.9	2.1	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
	20-Mar-03	550	25	2.1	8	8.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	27-Jun-03	1,600	300	18	9.2	19.7	<4.0	NA	NA	NA	NA	NA	NA	NA	NA
	3-Sep-03	1,200	270	2.0	2.0	7.4	<6.0	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	71	6.2	<1.1	0.83	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA
	1-Apr-04	93	3.8	<1.8	1.9	<3.0	0.64	<3.0	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	3,000	220	<35	41	8.1	<4.0	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE 4**  
**GROUNDWATER ANALYTICAL RESULTS**  
**Former Jackson's Garage, LQP #12014**  
**(All units reported in parts per billion)**

Well ID	Sample Date	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	(MTBE) Methyl Isopropyl Ether (ppb)	(DPE) Di-Tertiary Butyl Ether (ppb)	(ETBE) Ethyl Tertiary Butyl Ether (ppb)	(TAME) Tertiary Amyl Methyl Ether (ppb)	(TBBA) Tertiary Butyl Alcohol (ppb)	Methanol (ppb)	Ethanol (ppb)	Chlorinated Hydrocarbons (8010)- ppb	Lead
MW-5 Continued	4-Nov-04	3,000	210	23	56	17.7	<45	NA	NA	NA	NA	NA	NA	NA	NA
	26-Jan-05	2,500	160	17	55	12	<30	NA	NA	NA	NA	NA	NA	NA	NA
	12-May-05	410	26	29	11	3.84	<7.0	NA	NA	NA	NA	NA	NA	NA	NA
	29-Aug-05	2,600	320	22	9.2	<1.0***	NA	NA	NA	NA	NA	NA	NA	NA	NA
	18-Nov-05	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9-Mar-06	300	16	1.7	4.6	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	25-May-06	1000	58	56	3.6	2.94	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
MW-6	20-Aug-01	<50	<50	<50	<1.0	1.8	0.65	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
	21-Nov-01	<50	<50	<50	<1.0	0.84	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NA
	28-Feb-02	<50	3.5	<50	<1.0	0.55	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	23-May-02	65	12	<50	<50	1.2	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30-Sep-02	<50	14	<50	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	12-Dec-02	<50	<50	<50	<1.0	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	20-Mar-03	88	3.4	<50	<1.0	0.56	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	27-Jun-03	<50	2.9	<50	<1.0	0.30	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	3-Sep-03	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	<50	<50	<1.2	<0.50	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	26-Jan-05	<50	0.62	<50	<0.50	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12-May-05	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29-Aug-05	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	18-Nov-05	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9-Mar-06	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
	26-May-06	<50	<50	<50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-7	20-Aug-01	1,800	75	7	4	17	<0.50	1.3	<0.50	<0.50	9.6	<0.50	<0.50	<0.50	NA
	21-Nov-01	3,900	570	43	7.0	1.30	<2.5	<2.5	<2.5	<2.5	NA	NA	NA	NA	NA
	28-Feb-02	8,100	1,200	150	650	644	<10	<10	<10	<10	<100	<100	<100	<100	NA
	23-May-02	7,700	670	82	550	548	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NA
	30-Sep-02	5,400	820	67	250	287	<5.0	<10	<10	<10	<10	<10	<10	<10	NA
	12-Dec-02	5,400	1,000	66	350	274	<5.0	<10	<10	<10	<10	<10	<10	<10	NA
	20-Mar-03	7,300	740	44	550	284	<2.5	<2.5	<2.5	<2.5	<5.0	<5.0	<5.0	<5.0	NA
	27-Jun-03	4,700	570	41	245	340	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA
	3-Sep-03	2,100	650	35	170	110	<10	<10	<10	<10	NA	NA	NA	NA	NA
	20-Nov-03	7,300	650	86	1,100	588	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA
	31-Mar-04	5,300	510	50	510	260	<7.0	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	4,200	450	25	230	142	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	26-Jan-05	3,800	390	27	350	125	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	12-May-05	3,600	450	35	140	97	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	29-Aug-05	3,800	440	39	340	156	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	18-Nov-05	3,600	330	24	230	99	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	9-Mar-06	4,300	420	29	280	97	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	25-May-06	5,200	370	34	510	200	<3.0	NA	NA	NA	NA	NA	NA	NA	NA

Not sampled due to inaccessibility

**TABLE 4**  
**GROUNDWATER ANALYTICAL RESULTS**  
**Former Jackson's Garage, LOP #2014**  
(All units reported in parts per billion)

Well ID	Sample Date	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylenes (ppb)	(MTBE) Methyl Tertiary Butyl Ether (ppb)	(DPE) Di-isopropyl Ether (ppb)	(TBEE) Ethyl Tertiary Butyl Ether (ppb)	(TAME) Tertiary Amyl Methyl Ether (ppb)	(TBAA) Tertiary Butyl Alcohol (ppb)	Methanol (ppb)	Ethanol (ppb)	Chlorinated Hydrocarbons (ppb)	Lead (ppb)
MW-8	27-Jun-03	19,000	4,800	770	610	2,30	<1,670	NA	NA	NA	NA	NA	NA	NA	NA
	3-Sep-03	11,000	3,100	610	350	1,140	<1,000	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	61,000	2,800	3,850	2,500	1,890	<1,500	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	43,000	2,500	2,610	1,900	8,100	<1,500	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	29,000	2,700	1,200	1,300	4,020	<600	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	47,000	2,400	2,200	2,350	8,600	<2,000	NA	NA	NA	NA	NA	NA	NA	NA
	26-Jan-05	40,000	3,500	1,800	4,800	<600	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12-May-05	43,000	2,600	1,610	1,600	8,800	<1,000	NA	NA	NA	NA	NA	NA	NA	NA
	29-Aug-05	22,000	3,800	730	1,200	2,280	<300	NA	NA	NA	NA	NA	NA	NA	NA
	18-Nov-05														NA
	9-Mar-06	47,000	2,100	1,500	1,900	6,000									
	25-May-06	44,000	2,400	1,100	1,610	4,710	<600	NA	NA	NA	NA	NA	NA	NA	NA
MW-9	27-Jun-03	4,800	390	75	230	113	<80	NA	NA	NA	NA	NA	NA	NA	NA
	3-Sep-03	1,700	NQ	NQ	NQ	15	NO	NA	NA	NA	NA	NA	NA	NA	NA
	20-Nov-03	9,900	250	96	1,380	319	<130	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	9,400	220	110	690	237	<150	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	7,200	280	73	580	120	<60	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	11,000	260	140	1,600	238	<80	NA	NA	NA	NA	NA	NA	NA	NA
	31-Mar-04	65	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	3-Aug-04	170	2.9	<2.5	<2.5	<3.5	<3.5	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA
	4-Nov-04	68	<0.50	<1.0	<1.0	<1.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	26-Jan-05	180	<4.0	<4.0	<4.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA
	12-May-05	150	1.9	<2.5	<2.5	0.74	0.77	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA
	29-Aug-05	180	3.7	<3.0	<3.0	<1.50	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	NA
	18-Nov-05	74	<1.0	<1.0	<1.0	<1.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	9-Mar-06	400	5	<9.0	<9.0	2.3	3.1	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA
	26-May-06	<50	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	31-Mar-04	<50	<0.90	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	3-Aug-04	1,200	<8.0	<1.3	<1.3	17	8.7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	NA
	4-Nov-04	<50	<0.50	<0.50	<0.50	<0.50	0.62	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA
	26-Jan-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	12-May-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	29-Aug-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	18-Nov-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	9-Mar-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	26-May-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	3-Aug-04	<50	<1.1	<1.1	<1.1	1.3	3.23	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA
	4-Nov-04	<50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	12-May-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	29-Aug-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	18-Nov-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	9-Mar-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	26-May-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	3-Aug-04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	4-Nov-04	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	12-May-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	29-Aug-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	18-Nov-05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	9-Mar-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA
	26-May-06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA

**TABLE 4**  
**GROUNDWATER ANALYTICAL RESULTS**  
**Former Jackson's Garage, LOP #12014**  
**(All units reported in parts per billion)**

Well ID	Sample Date	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethy-Benzene (ppb)	Total Xylenes (ppb)	(M)TEE (ppb)	(Di)E (ppb)	(E)TAE (ppb)	(TAME) Tertiary Butyl Ether (ppb)	(TBA) Tertiary Butyl Alcohol (ppb)	Methanol (ppb)	Ethanol (ppb)	Chlorinated Hydrocarbons (ppb)	Lead (ppb)
MW-13	15-Aug-04	51	<1.5	<1.2	0.84	0.59	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	3-Aug-04	<50	<0.50	<0.50	<0.50	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA
	4-Nov-04	<50	<0.50	<0.50	<0.63	2.1	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	26-Jan-05	<50	<0.50	<0.50	<0.50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	12-May-05	60	0.52	<0.50	0.6	0.5	<1.0	NA	NA	NA	NA	NA	NA	NA	NA
	29-Aug-05	65	<0.50	<0.50	0.77	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	18-Nov-05	<50	<0.50	<0.50	<0.50	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	9-Mar-06	120	3.4	<0.50	2.1	1.97	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
	25-May-06	<50	<0.50	<0.50	<0.50	0.57	<3.0	NA	NA	NA	NA	NA	NA	NA	NA
Blank	28-Feb-02	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<1.0	<1.0	<5.0	<5.0	NA	NA	NA
	23-May-02	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<1.0	<1.0	<1.0	<5.0	<5.0	NA	NA	NA
	12-Dec-02	<50	<0.5	<0.5	<0.5	<1.0	<0.50	<1.0	<1.0	<1.0	<5.0	<5.0	NA	NA	NA
	12-May-05	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA
	25-May-06	<50	<0.5	<0.5	<0.5	<1.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA

&lt;X = analysis not detected at, or above the detection limit of X.

ND = Analyte not detected above laboratory detection limit.

NA = Not analyzed

NQ = Non-quantifiable. This surrogate could not be quantified due to a large amount of early eluting material.

\* Sample was filtered by the laboratory before analysis

\*\* Sample contained 3.4 ppb when analyzed by EPA Method 5030/B021B and in 2. ppb when analyzed by EPA Method 8260B.

\*\*\* Sample contained 5.7 ppb when analyzed by EPA Method 5030/B021B and in 4.0 ppb when analyzed by EPA Method 8260B.

\*\*\*\* Sample was ND at &lt;80 ppb when analyzed by EPA Method 5030/B021B and ND &lt;1.0 ppb when analyzed by EPA Method 8260B.

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**Appendix C**  
**Winzler & Kelly Standard Operating Procedures (SOPs)**

**WINZLER & KELLY CONSULTING ENGINEERS**

**STANDARD OPERATING PROCEDURES**

**for**

**MONITOR WELL PURGING AND SAMPLING ACTIVITIES**

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## **1.0 Objective**

To establish accepted procedures for the purging and sampling groundwater from monitoring wells, to ensure that representative samples of formation water are collected by accepted methods.

## **1.1 Background**

To obtain a representative groundwater sample from monitor wells, it is necessary to remove (purge) stagnant water from within and near the well prior to sampling. In general, three to seven casing volumes must be removed from the well prior to sampling, to provide a representative sample. Wells may be sampled after purging less than the minimum three volumes if well recharge rates are beyond reasonable time constraints. The specific method of well purging will be decided on a case by case basis, or as required by project specifications.

## **1.2 Personnel Required and Responsibilities**

Project Manager: The Project Manager (PM) is responsible for ensuring that field personnel have been trained in the use of these procedures and for verifying that monitoring well purging and sampling activities are performed in compliance with these SOP's.

Field Technician: The Field Technician is responsible for complying with these SOP's, including the purging and sampling of monitor wells, the safe containerization of extracted waters, the documentation of field procedures, and the handling of samples..

## **2.0 WELL PURGING ACTIVITIES**

### **2.1 Equipment Required**

- Bottom-filling bailer, suction air pump, air-lift pump, gas operated (bladder) pump, submersible pump, or other pumping device
- pH meter
- Conductivity/Temperature Meter
- Water Level Indicator
- Well Sampling Data Sheet
- Indelible marker
- Disposable gloves
- Containers to hold extracted water (as required)

## 2.2. Purging Procedure

Prior to groundwater sampling, each monitoring well will be purged as described below. Prior to insertion into each well, all equipment will be either decontaminated (following W&K Decontamination procedures) or will be deemed clean or previously unused by the manufacturer.

- Open all monitoring wells to be purged and allow to equilibrate 5 to 15 minutes. Record time and visual observations regarding well access, condition, security, etc. in log book.
- Obtain depth to groundwater level readings according to Winzler & Kelly Standard Operating Procedures for Groundwater Level measurements and Free Phase Hydrocarbon Measurements. Record time and readings on the Well Level Measurement Data Sheet.
- Calculate the volume of standing water in each monitoring well. Record the volume calculated for each well on the Well Sampling Data Sheet.
- Begin purging the well by removing water from the well and collecting in a calibrated container (i.e., 5-gallon bucket marked in 1-gallon increments). The depth, or interval, from which the water is being purged should be noted on the data sheet.
- Obtain readings of field parameters (pH, conductivity, temperature, and turbidity) and make visual observations of color/odor/turbidity at selected intervals (i.e., every gallon, every five gallons, etc.) throughout the purging process. Depending on the calculated volume and the expected number of gallons to be purged, a minimum of five readings should be collected. Record the time, readings, and visual comments on the Purge Data Sheet.
- Continue purging until at least three (minimum) to four well volumes have been removed and the field parameters stabilize to within:

pH	$\approx 0.1$
conductivity	$\approx 10\%$
turbidity	$\approx 10\%$
temperature	$\approx 1^\circ$

Do not exceed seven well volumes.

- Obtain a final depth to groundwater level measurement prior to collection of the groundwater sample and note the reading and time on the Well Level Measurement Data Sheet. Be sure that the measurement probe has been thoroughly decontaminated prior to insertion into each well. Note any qualitative comments regarding recharge rate of each well, and calculate the percent of the original water column that has recovered at the time of the final depth measurement. It is ideal to attain a minimum of 80% water level recovery prior to sampling, if time constraints allow. Very slow recharge rates may not allow purging the minimum three volumes or 80% recovery; lesser volumes may be used for sampling, as needed and documented.
- Collect a groundwater sample following the directions below under Section 3.0.
- Containerize all purge water and decontamination water in 55-gallon drums. Use yellow indelible markers (storeroom supply) to label all drums on the side with date, contents, origin and other pertinent information. Avoid marking the tops of drums

with black marker, such marks are temporary and will soon fade/rust. Note the number, condition and location of drums on site in the field notes.

### 3.0 WELL SAMPLING ACTIVITIES

#### 3.1 Equipment Required

- Disposable bailer (previously unused) \*
- Bottom emptying device (sampling port)
- Monofilament nylon line (min 40-lb test)
- Monitor Well Purge & Sample Data Sheets
- Sample containers (preserved, as required) - provided by the laboratory
- Sample labels
- Indelible marker
- Disposal gloves
- Decontamination soap (Alconox)
- Distilled water for equipment decontamination.

\* A variety of sampling techniques are available for the collection of groundwater samples. Except where otherwise required, W&K only utilizes disposable polyethylene bailers to collect groundwater samples.

#### 3.2 Sampling Procedure

Prior to collecting a groundwater sample from a monitoring well, each well must be properly purged in accordance with W&K's SOP for Monitoring Well Purging Activities (see Section 2.0 above), including the measurement of the final water level and documentation of recharge.

- Water from the desired screen interval will be collected by lowering the previously unused disposable, polyethylene, bottom-filling bailer into the well.
- When bailer is completely full, carefully retract the bailer from the well casing.
- Using a previously unused, new, bottom-emptying device, to minimize agitation of the water, transfer the water from the bailer to the sample containers.
- When sampling for volatile constituents (VOA's), the water samples will be collected in 40-ml glass vials (preserved as required by the analyses requested). Precautions will be taken to prevent capturing air bubbles in the vials.
- Upon filling, each vial will be immediately capped with a Teflon septum and plastic screw cap. The vial will be checked for air bubbles by inverting and gently tapping the vial. If any bubbles are visible, the vial will be refilled and confirmed to be free of any air bubbles.
- At a minimum, all samples will be labeled with the following information:

Sample ID	Date and Time Sample Collected
Location	Sampler's Initials
Project Number	Analyses Requested
- Sample information will be documented on the Chain-of-Custody form.

- All samples will be placed in an ice chest, chilled to a temperature of 4°C. The ice chest will remain in the custody of the sampler until it is transferred to the courier service for delivery at the analytical laboratory for analyses. Any and all transfer of sample custody must be documented on the Chain-of-Custody form with the name, signature, affiliation, date and time of the persons releasing and receiving custody of the samples.
- Upon completion of the sampling activities, each well shall be closed and secured by replacing the well cap and securing the lock.
- Dispose of gloves, bailers, bottom-emptying devices, and bailing line after each use.

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**Appendix D**  
**Laboratory Analytical Reports**

**North Coast Laboratories, Ltd.**

Date: 13-Jun-06

CLIENT: Winzler and Kelly  
Project: 01173501.014 Jackson's Garage  
Lab Order: 0606070

**CASE NARRATIVE****BTEX:**

The reporting limit for MTBE was raised for sample MW-5 due to matrix interference.

Sample MW-8 was diluted and the reporting limit for MTBE was raised additionally due to matrix interference.

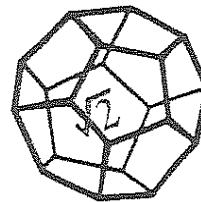
MTBE for sample MW-7 was reported as ND with a dilution due to matrix interference.

The surrogate recoveries for samples MW-12 and MW-13 were below the lower acceptance limit. The response of the reporting limit standard was such that the target analytes would have been detected even with the low recoveries; therefore, the data were accepted.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were below the lower acceptance limit for benzene. The LCSD recovery was also below the lower acceptance limit for ethylbenzene. The response of the reporting limit standard was such that the analytes would have been detected even with the low recovery; therefore, the data were accepted.

**TPH as Gasoline:**

Samples MW-5, MW-8 and MW-7 appear to be similar to gasoline but certain peak ratios are not that of a fresh gasoline standard. The reported results represent the amount of material in the gasoline range.



**NORTH COAST  
LABORATORIES LTD.**

June 14, 2006

REPORTED  
JUN 16 2006

WK - EUREKA

Winzler and Kelly  
633 Third Street  
Eureka, CA 95501

Attn: Paul Jones

RE: 01173501.014 Jackson's Garage

#### SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-6
02A	MW-10
03A	MW-11
04A	MW-12
05A	MW-13
06A	MW-5
07A	MW-8
08A	MW-7
09A	QCTB

Order No.: 0606070

Invoice No.: 58794

PO No.:

ELAP No. 1247-Expires July 2006

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

#### REPORT CERTIFIED BY

Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.  
Laboratory Director

Date: 12-Jun-06  
 WorkOrder: 0606070

# ANALYTICAL REPORT

Client Sample ID: MW-6  
 Lab ID: 0606070-01A

Received: 5/30/06

Collected: 5/26/06 10:14

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	3.0	µg/L	1.0		6/7/06
Benzene	ND	0.50	µg/L	1.0		6/7/06
Toluene	ND	0.50	µg/L	1.0		6/7/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/7/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/7/06
o-Xylene	ND	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	86.4	85-115	% Rec	1.0		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/7/06

Client Sample ID: MW-10

Received: 5/30/06

Collected: 5/26/06 11:36

Lab ID: 0606070-02A

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	3.0	µg/L	1.0		6/7/06
Benzene	ND	0.50	µg/L	1.0		6/7/06
Toluene	ND	0.50	µg/L	1.0		6/7/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/7/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/7/06
o-Xylene	ND	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	90.9	85-115	% Rec	1.0		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/7/06

Date: 12-Jun-06  
 WorkOrder: 0606070

## ANALYTICAL REPORT

Client Sample ID: MW-11  
 Lab ID: 0606070-03A

Received: 5/30/06

Collected: 5/26/06 12:00

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	3.0	µg/L	1.0		6/7/06
Benzene	ND	0.50	µg/L	1.0		6/7/06
Toluene	ND	0.50	µg/L	1.0		6/7/06
Ethylbenzene	0.53	0.50	µg/L	1.0		6/7/06
m,p-Xylene	0.69	0.50	µg/L	1.0		6/7/06
o-Xylene	ND	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	90.4	85-115	% Rec	1.0		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/7/06

Client Sample ID: MW-12  
 Lab ID: 0606070-04A

Received: 5/30/06

Collected: 5/26/06 12:45

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	3.0	µg/L	1.0		6/7/06
Benzene	ND	0.50	µg/L	1.0		6/7/06
Toluene	ND	0.50	µg/L	1.0		6/7/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/7/06
m,p-Xylene	0.56	0.50	µg/L	1.0		6/7/06
o-Xylene	ND	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	83.1	85-115	% Rec	1.0		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/7/06

Date: 12-Jun-06  
 WorkOrder: 0606070

# ANALYTICAL REPORT

Client Sample ID: MW-13  
 Lab ID: 0606070-05A

Received: 5/30/06

Collected: 5/26/06 13:40

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	3.0	µg/L	1.0		6/7/06
Benzene	ND	0.50	µg/L	1.0		6/7/06
Toluene	ND	0.50	µg/L	1.0		6/7/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/7/06
m,p-Xylene	0.57	0.50	µg/L	1.0		6/7/06
o-Xylene	ND	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	83.0	85-115	% Rec	1.0		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		6/7/06

Client Sample ID: MW-5  
 Lab ID: 0606070-06A

Received: 5/30/06

Collected: 5/26/06 14:47

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	15	µg/L	1.0		6/7/06
Benzene	58	5.0	µg/L	10		6/7/06
Toluene	5.6	0.50	µg/L	1.0		6/7/06
Ethylbenzene	9.5	0.50	µg/L	1.0		6/7/06
m,p-Xylene	2.4	0.50	µg/L	1.0		6/7/06
o-Xylene	0.54	0.50	µg/L	1.0		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	95.0	85-115	% Rec	10		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	1,000	50	µg/L	1.0		6/7/06

Date: 12-Jun-06  
 WorkOrder: 0606070

## ANALYTICAL REPORT

Client Sample ID: MW-8  
 Lab ID: 0606070-07A

Received: 5/30/06

Collected: 5/26/06 15:15

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	800	µg/L	100		6/7/06
Benzene	2,400	500	µg/L	1,000		6/7/06
Toluene	1,100	500	µg/L	1,000		6/7/06
Ethylbenzene	1,600	500	µg/L	1,000		6/7/06
m,p-Xylene	3,800	500	µg/L	1,000		6/7/06
o-Xylene	910	500	µg/L	1,000		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	93.2	85-115	% Rec	1,000		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	44,000	5,000	µg/L	100		6/7/06

Client Sample ID: MW-7  
 Lab ID: 0606070-08A

Received: 5/30/06

Collected: 5/26/06 16:01

Test Name: BTEX

Reference: EPA 5030/EPA 8021B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
MTBE	ND	30	µg/L	10		6/7/06
Benzene	370	50	µg/L	100		6/7/06
Toluene	34	5.0	µg/L	10		6/7/06
Ethylbenzene	510	50	µg/L	100		6/7/06
m,p-Xylene	180	50	µg/L	100		6/7/06
o-Xylene	20	5.0	µg/L	10		6/7/06
Surrogate: Cis-1,2-Dichloroethylene	103	85-115	% Rec	10		6/7/06

Test Name: TPH as Gasoline

Reference: EPA 5030/GCFID(LUFT)/EPA 8015B

<u>Parameter</u>	<u>Result</u>	<u>Limit</u>	<u>Units</u>	<u>DF</u>	<u>Extracted</u>	<u>Analyzed</u>
TPHC Gas (C6-C14)	5,200	500	µg/L	10		6/7/06

## North Coast Laboratories, Ltd.

Date: 12-Jun-06

**QC SUMMARY REPORT****Method Blank****CLIENT:** Winzler and Kelly**Work Order:** 0606070**Project:** 01173501.014 Jackson's Garage

Sample ID	MB-6/6/06	Batch ID:	R41702	Test Code:	BTXEW	Units:	µg/L	Analysis Date	6/7/06 4:44:09 AM	Prep Date	
Client ID:		Run ID:	ORGCS_060607B	SeqNo:	598768						
Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPD Limit	Qual
MTBE	ND	3.0									J
Benzene	0.07492	0.50									J
Toluene	0.1157	0.50									J
Ethylbenzene	0.07767	0.50									J
m,p-Xylene	0.1863	0.50									J
o-Xylene	0.07695	0.50									J
Cis-1,2-Dichloroethylene	0.896	0.10	1.00	0	88.7%	85	115	0			

Sample ID	MB-6/6/06	Batch ID:	R41701	Test Code:	TPHCGW	Units:	µg/L	Analysis Date	6/7/06 4:44:09 AM	Prep Date	
Client ID:		Run ID:	ORGCS_060607A	SeqNo:	598745						
Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	% RPD	RPD Limit	Qual
TPHC Gas (C6-C14)	ND	5.0									

**Qualifiers:** ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

## North Coast Laboratories, Ltd.

Date: 12-Jun-06

**QC SUMMARY REPORT**  
Laboratory Control Spike

CLIENT: Winzler and Kelly

Work Order: 0606070

Project: 01173501.014 Jackson's Garage

Sample ID	LCS-06343	Batch ID:	R41702	Test Code:	BTXEW	Units:	µg/L			Analysis Date	6/7/06 1:47:51 AM	Prep Date	
Client ID:				Run ID:	ORGCB_060607B			SeqNo:	598766				
Analyte		Result	Limit	SPK value	SPK Ref Val	% Rec		LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE		37.05	3.0	40.0	0	92.6%		85	115		0		
Benzene		4.190	0.50	5.00	0	83.8%		85	115		0		S
Toluene		4.539	0.50	5.00	0	90.8%		85	115		0		
Ethylbenzene		4.318	0.50	5.00	0	86.4%		85	115		0		
m,p-Xylene		9.020	0.50	10.0	0	90.2%		85	115		0		
o-Xylene		4.584	0.50	5.00	0	91.7%		85	115		0		
Cis-1,2-Dichloroethylene		1.02	0.10	1.00	0	102%		85	115		0		
Sample ID	LCSD-06343	Batch ID:	R41702	Test Code:	BTXEW	Units:	µg/L			Analysis Date	6/7/06 11:50:39 AM	Prep Date	
Client ID:				Run ID:	ORGCB_060607B			SeqNo:	598779				
Analyte		Result	Limit	SPK value	SPK Ref Val	% Rec		LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE		36.48	3.0	40.0	0	91.2%		85	115		37.0	1.56%	15
Benzene		4.115	0.50	5.00	0	82.3%		85	115		4.19	1.81%	15
Toluene		4.379	0.50	5.00	0	87.6%		85	115		4.54	3.60%	15
Ethylbenzene		4.195	0.50	5.00	0	83.9%		85	115		4.32	2.88%	15
m,p-Xylene		8.683	0.50	10.0	0	86.8%		85	115		9.02	3.80%	15
o-Xylene		4.403	0.50	5.00	0	88.1%		85	115		4.58	4.02%	15
Cis-1,2-Dichloroethylene		0.994	0.10	1.00	0	99.4%		85	115		1.02	3.06%	15
Sample ID	LCS-06344	Batch ID:	R41701	Test Code:	TPHCGW	Units:	µg/L			Analysis Date	6/7/06 2:58:24 AM	Prep Date	
Client ID:				Run ID:	ORGCB_060607A			SeqNo:	598743				
Analyte		Result	Limit	SPK value	SPK Ref Val	% Rec		LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)		484.4	50	500	0	96.9%		85	115		0		

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limitsS - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank

**QC SUMMARY REPORT**

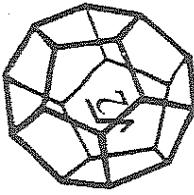
Project: Laboratory Control Spike Duplicate

Sample ID	LCSD-06344	Batch ID:	R41701	Test Code:	TPHCGW	Units:	µg/L	Analysis Date	6/7/06 12:25:59 PM	Prep Date				
Client ID:				Run ID:	ORG C8_060607A			SeqNo:	598751					
Analyte				Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD RefVal	% RPD	RPD Limit	Qual
TPHC Gas (C6-C14)				475.9	50	500	0	95.2%	85	115	484	1.76%	15	

Qualifiers: ND - Not Detected at the Reporting Limit  
F - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



NORTH COAST  
LABORATORIES LTD.

5680 West End Road • Arcata • CA 95521-9202  
707-822-4649 FAX 707-822-6831

## Chain of Custody

• 224 •

Attention: <u>Paul Jones</u>	Results & Invoice to: <u>John Lee &amp; Family</u>
Address: <u>633 Third St</u>	<u>Fresno, CA 93501</u>
Phone: <u>443-8326</u>	Copies of Report to: _____
Sampler (Sign & Print): <u>C. A. w.</u>	
<b>PROJECT INFORMATION</b>	
Project Number: <u>01173501.014</u>	Project Name: <u>Jackson's Garage</u>
Purchase Order Number: _____	

<b>LABORATORY NUMBER:</b>	<b>123456789</b>	
<b>TAT:</b>	<input type="checkbox"/> 24 Hr	<input type="checkbox"/> 48 Hr
<b>STD (2-3 Wk)</b>	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____
<b>PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES</b>		
<b>REPORTING REQUIREMENTS:</b>		
State Forms <input type="checkbox"/>		
Preliminary:	<input type="checkbox"/> FAX	<input type="checkbox"/> Verbal
Final Report:	<input type="checkbox"/> FAX	<input type="checkbox"/> Verbal
By: _____ / _____ / _____		
<b>CONTAINER CODES:</b> 1—1/2 gal. pt; 2—250 ml pt; 3—500 ml pt; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L CG; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other		
<b>PRESERVATIVE CODES:</b> a—HNO <sub>3</sub> ; b—HCl; c—H <sub>2</sub> SO <sub>4</sub> ; d—Na <sub>2</sub> SO <sub>4</sub> ; e—NaOH; f—C <sub>2</sub> H <sub>5</sub> O <sub>2</sub> Cl; g—other		
<b>SAMPLE CONDITION/SPECIAL INSTRUCTIONS</b>		
Specimens should be analyzed only if no samples are held for 14 days.		
Report in EDF - Global ID: T0602300014		

<b>SAMPLE DISPOSAL</b>	<b>CHAIN OF CUSTODY SEALS Y/N/NA</b>					
<input type="checkbox"/> NCL Disposal of Non-Contaminated	UPS	Air-Ex	Fed-Ex	Bus	Hand	<input checked="" type="checkbox"/>
<input type="checkbox"/> Return	<input type="checkbox"/> Pickup					

\***MATRIX**: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

**ALL CONTAMINATED NON-ANALOGUE SAMPLES WILL BE RETAINED TO CLINIC**

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## Appendix E Field Notes



By CA Date 5-25-06 Client Jacksons Sheet No. \_\_\_\_\_ of \_\_\_\_\_  
Subject Monitoring Job No. 01173501.014

- Arrived on site
- A car is parked over MW-4. A trailer is parked over MW-6
- MW-1 - no access
- A car is parked over MW-9, a bunch of branches are over MW-5 and MW-8.
- Too many wells are blocked.
- I will try to move some stuff off the wells
- decon Water meter + Purge pump upon arrival + between wells
- Inserted D.O. meter in each well to get data.

Well	pH	Temp	cond.	D.O.
MW-4	6.21	15.1	111.9 uS/cm	0.3 mg/L
MW-3	6.48	11.2	72.0 uS/cm	1.2 mg/L
MW-2	6.8	14.2	115.3 uS/cm	1.4 mg/L
MW-6	See data sheets for info			
MW-10	11	11	11	1.3 mg/L
MW-11	11	11	11	1.2 mg/L
MW-12	11	11	11	1.2 mg/L
MW-13	11	11	11	1.2 mg/L
MW-5	11	11	11	1.2 mg/L
MW-9	5.97	12.7	78.3 uS/cm	2.0 mg/L
MW-7	See data sheets for info			
MW-8	11	11	11	1.2 mg/L
MW-1	no access			

It is raining

- Stored purge water in drums



## DRUM INVENTORY DATA SHEET

PROJECT NAME: \_\_\_\_\_  
PROJECT NUMBER: \_\_\_\_\_

**TODAY'S DATE:** \_\_\_\_\_  
**FIELD PERSONNEL:** \_\_\_\_\_



633 Third Street, Eureka, CA 95501-0417  
(707) 443-8326 / FAX (707) 444-8330

By CA Date 5-26-06 Client Jackson's Sheet No. \_\_\_\_\_ of \_\_\_\_\_  
Subject monitoring Job No. 01173501.014

Arrived on site

- continued purging and began collecting samples
- Waited for the wells to recharge to 80% before sampling
- Stored purge water in the drums

MW-6	10:14
MW-10	11:36
MW-11	12:00
MW-12	12:45
MW-13	1:40
MW-5	2:47
MW-8	3:15
MW-7	4:01

- stored the samples in a cooler with blue ice
- secured the wells
- the concrete on MW-11 is crack
- Secured the wells

PROJECT NAME: Jackson's

PROJECT NUMBER: 01173501.014

TODAY'S DATE: 5-25-06

FIELD PERSONNEL: CA

### Weather Conditions Today

cloudy

WINZLER & KELLY  
Consulting Engineering

SUBJECT NAME: Jackson's  
PROJECT NUMBER: 01173501.014  
WELL DESIGNATION: MW-6

PROJECT DATE: 5-25-06  
SAMPLER: \_\_\_\_\_  
SAMPLE NUMBER MW - 6

**CONDITION OF WELL HEAD/VAULT/CAP & LOCK**

- A. TOP OF CASING ELEVATION  
B. DEPTH TO GROUNDWATER (initial) 5.40  
C. DEPTH OF WELL MEASURED 15  
D. HEIGHT OF WATER COLUMN (C-B) 15 - 5.40 = 9.60  
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2"  3"  4"  OTHER

CALCULATED WELL VOLUME:  $D \times V = 9.60 \times 16.3 = 154$

- A. Volume (V) of 2" wall = 0.163 gal/ft  
 B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN yes FLOATING PRODUCT THICKNESS 2.2

PUMP TYPE: POLY BAILER \_\_\_\_\_ STAINLESS BAILER \_\_\_\_\_  
ELECTRIC \_\_\_\_\_ OTHER \_\_\_\_\_

**PUMP DEPTH:**

#### RECHARGE RATE (qualitative):

SAMPLER TYPE: TEFILON BAILER      ACRYLIC BAILER      DISPOSABLE BAILER

SAMPLES COLLECTER: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_

WINZLER & KELLY  
Consulting Engineering

SUBJECT NAME: Jackson's  
PROJECT NUMBER: 01173501,014  
WELL DESIGNATION: MW-10

PROJECT DATE: 5-25-06  
SAMPLER: \_\_\_\_\_  
SAMPLE NUMBER MW-10

**CONDITION OF WELL HEAD/VAULT/CAP & LOCK**

- A. TOP OF CASING ELEVATION  
 B. DEPTH TO GROUNDWATER (initial) 5.40  
 C. DEPTH OF WELL MEASURED 13.81  
 D. HEIGHT OF WATER COLUMN (C-B) 13.81 - 5.40 = 8.41  
 E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2"  3"  4"  OTHER

CALCULATED WELL VOLUME: D<sub>x</sub>V = 8.41 x 16.3 = 137

- A. Volume (V) of 2" wall = 0.163 gal/ft  
 B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS 0.0

PUMP TYPE: POLY BAILER  
ELECTRIC

STAINLESS BAILER  
OTHER

**PUMP DEPTH:**

### RECHARGE RATE (qualitative):

SAMPLER TYPE: TEFION BAILER      ACRYLIC BAILER      DISPOSABLE BAILER

SAMPLES COLLECTER: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS

**WINZLER & KELLY**  
Consulting Engineering

SUBJECT NAME: Jackson's  
 PROJECT NUMBER: 01173501.014  
 WELL DESIGNATION: MW-11

PROJECT DATE: 5-25-06  
 SAMPLER:  
 SAMPLE NUMBER MW-11

CONDITION OF WELL HEAD/VAULT/CAP & LOCK

- A. TOP OF CASING ELEVATION
- B. DEPTH TO GROUNDWATER (initial) 5.11
- C. DEPTH OF WELL MEASURED 5.
- D. HEIGHT OF WATER COLUMN (C-B) 15 - 5.11 = 9.89
- E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓    3" \_\_\_\_\_    4" \_\_\_\_\_ OTHER \_\_\_\_\_

CALCULATED WELL VOLUME: DxV= 9.89 x 1.163 = 11.61 gal

- A. Volume (V) of 2" wall = 0.163 gal/ft
- B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER \_\_\_\_\_ STAINLESS BAILER \_\_\_\_\_  
 ELECTRIC \_\_\_\_\_ OTHER \_\_\_\_\_

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	pH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or μmhos/cm)	TURBIDITY (NTU or visual)
2:10	2	1.24	6.33	14.2	39.5 μS/cm	
2:22	3	1.86	6.26	14.2	81.8 μS/cm	
2:32	4	2.48	6.26	14.2	81.8 μS/cm	
2:45	4.25	2.64	6.23	14.2	109.8 μS/cm	
2:57	4.50	2.80	6.21	14.2	86.8 μS/cm	
3:07	4.75	2.95	6.20	14.2	93.9 μS/cm	
3:20	5.0	3.11	6.20	14.2	93.0 μS/cm	↓

RECHARGE RATE (qualitative): \_\_\_\_\_

SAMPLER TYPE: TEFILON BAILER \_\_\_\_\_ ACRYLIC BAILER \_\_\_\_\_ DISPOSABLE BAILER \_\_\_\_\_

SAMPLES COLLECTED: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
 PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
 500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
 FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_

**WINZLER & KELLY**  
Consulting Engineering

SUBJECT NAME: Jacksons  
PROJECT NUMBER: 01173501.014  
WELL DESIGNATION: MW-1Z

PROJECT DATE: 5-25-06  
SAMPLER: \_\_\_\_\_  
SAMPLE NUMBER MW-12

**CONDITION OF WELL HEAD/VAULT/CAP & LOCK**

- A. TOP OF CASING ELEVATION  
 B. DEPTH TO GROUNDWATER (initial)  $\leq -0.2$   
 C. DEPTH OF WELL MEASURED 15'  
 D. HEIGHT OF WATER COLUMN (C-B)  $15.00 - 5.02 = 9.98$   
 E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2"  3"  4"  OTHER

CALCULATED WELL VOLUME: D<sub>x</sub>V = 9.98 x 163 = 163 cu ft

- A. Volume (V) of 2" wall = 0.163 gal/ft  
 B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS 0.0

PUMP TYPE: POLY BAILEY  
ELECTRIC

STAINLESS BAILER \_\_\_\_\_  
OTHER \_\_\_\_\_

PUMP DEPTH:

### RECHARGE RATE (qualitative):

SAMPLER TYPE: **TEFLON BAILER**      **ACRYLIC BAILER**      **DISPOSABLE BAILER**

SAMPLES COLLECTED: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_

**WINZLER & KELLY**  
**Consulting Engineering**

SUBJECT NAME: Jackson's  
 PROJECT NUMBER: 01173501.014  
 WELL DESIGNATION: MW-5

PROJECT DATE: 5-26-06  
 SAMPLER:  
 SAMPLE NUMBER MW-5

CONDITION OF WELL HEAD/VAULT/CAP & LOCK

- A. TOP OF CASING ELEVATION
- B. DEPTH TO GROUNDWATER (initial) 4.97
- C. DEPTH OF WELL MEASURED 15
- D. HEIGHT OF WATER COLUMN (C-B) 15 - 4.97 = 10.05
- E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓    3" \_\_\_\_\_    4" \_\_\_\_\_ OTHER \_\_\_\_\_

CALCULATED WELL VOLUME: DxV = 10.05 x .163 = 1.64

- A. Volume (V) of 2" wall = 0.163 gal/ft
- B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR yes SHEEN yes FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER \_\_\_\_\_ STAINLESS BAILER \_\_\_\_\_  
 ELECTRIC \_\_\_\_\_ OTHER \_\_\_\_\_

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or μmhos/cm)	TURBIDITY (NTU or visual)
10:20	2	1.22	5.93	12.5	21.1 μS/cm	cloudy
10:31	3	1.83	6.03	12.5	25.2 μS/cm	
10:45	4	2.44	6.06	12.6	22.7 μS/cm	
10:57	4.25	2.59	6.08	12.5	19.34 μS/cm	
11:07	4.5	2.74	6.10	12.5	30.3 μS/cm	
11:19	4.75	2.90	6.10	12.4	25.9 μS/cm	
11:33	5.0	3.05	6.10	12.4	25.5 μS/cm	↓

RECHARGE RATE (qualitative): \_\_\_\_\_

SAMPLER TYPE: TEFLO N BAILER \_\_\_\_\_ ACRYLIC BAILER \_\_\_\_\_ DISPOSABLE BAILER \_\_\_\_\_

SAMPLES COLLECTED: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
 PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
 500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
 FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_

**WINZLER & KELLY**  
Consulting Engineering

SUBJECT NAME: Jackson  
 PROJECT NUMBER: 01173501.014  
 WELL DESIGNATION: MW-8

PROJECT DATE: 5-26-06  
 SAMPLER: \_\_\_\_\_  
 SAMPLE NUMBER: MW-8

CONDITION OF WELL HEAD/VAULT/CAP & LOCK

- A. TOP OF CASING ELEVATION
- B. DEPTH TO GROUNDWATER (initial) 4.17
- C. DEPTH OF WELL MEASURED 15
- D. HEIGHT OF WATER COLUMN (C-B) 15 - 4.17 = 10.83
- E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2"  3" \_\_\_\_\_ 4" \_\_\_\_\_ OTHER \_\_\_\_\_

CALCULATED WELL VOLUME: DxV= 10.83 X .163 = 1.76

- A. Volume (V) of 2" wall = 0.163 gal/ft
- B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR yes SHEEN yes FLOWING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER  
ELECTRIC \_\_\_\_\_

STAINLESS BAILER  
OTHER \_\_\_\_\_

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
11:47	2	1.14	5.97	13.2	258 45/cm	cloudy
12:04	4	2.27	5.97	13.2	62.5 45/cm	
12:14	4.5	2.56	5.96	12.8	566 45/cm	
12:27	4.75	2.70	5.95	13.0	591 45/cm	
12:40	5	2.84	5.95	12.8	505 45/cm	
12:50	5.25	2.98	5.92	12.8	542 45/cm	
1:01	5.5	3.125	5.92	12.8	540 45/cm	▼

RECHARGE RATE (qualitative):

SAMPLER TYPE: TEFILON BAILER  ACRYLIC BAILER  DISPOSABLE BAILER

SAMPLES COLLECTED: PRESERVED VOA'S  UNPRESERVED VOA'S   
 PRESERVED LITERS  UNPRESERVED LITERS   
 500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
 FILTERED  UNFILTERED  OTHER

COMMENTS \_\_\_\_\_

**WINZLER & KELLY**  
Consulting Engineering

SUBJECT NAME: Jackson's  
 PROJECT NUMBER: 011735011014  
 WELL DESIGNATION: MW-7

PROJECT DATE: 5-26-06  
 SAMPLER: \_\_\_\_\_  
 SAMPLE NUMBER MW-7

CONDITION OF WELL HEAD/VAULT/CAP & LOCK

- A. TOP OF CASING ELEVATION
- B. DEPTH TO GROUNDWATER (initial) 3.97
- C. DEPTH OF WELL MEASURED 15
- D. HEIGHT OF WATER COLUMN (C-B) 15 - 3.97 = 11.03
- E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2" ✓    3" \_\_\_\_\_    4" \_\_\_\_\_ OTHER \_\_\_\_\_

CALCULATED WELL VOLUME:  $D \times V = 11.03 \times 163 = 1,80$

- A. Volume (V) of 2" wall = 0.163 gal/ft
- B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR yes SHEEN yes FLOATING PRODUCT THICKNESS no

PUMP TYPE: POLY BAILER \_\_\_\_\_ STAINLESS BAILER \_\_\_\_\_  
 ELECTRIC \_\_\_\_\_ OTHER \_\_\_\_\_

PUMP DEPTH:

TIME	GALLONS PURGED	NO. OF WELL VOLUMES	PH	TEMPERATURE (°F OR °C)	CONDUCTIVITY (mmhos/cm or µmhos/cm)	TURBIDITY (NTU or visual)
1:20	2	1.1	6.01	14.1	581.05/cm	cloudy
1:33	4	2.22	6.09	14.2	144.0 us/cm	
1:45	4.5	2.50	6.13	14.0	97.7 us/cm	
1:57	4.75	2.64	6.16	13.9	141.4 us/cm	
2:07	5	2.78	6.17	14.2	141.9 us/cm	
2:20	5.25	2.92	6.17	14.2	141.8 us/cm	
2:35	5.5	3.06	6.17	14.2	141.7 us/cm	↓

RECHARGE RATE (qualitative): \_\_\_\_\_

SAMPLER TYPE: TEFILON BAILER \_\_\_\_\_ ACRYLIC BAILER \_\_\_\_\_ DISPOSABLE BAILER \_\_\_\_\_

SAMPLES COLLECTER: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
 PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
 500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
 FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_

**WINZLER & KELLY**  
Consulting Engineering

SUBJECT NAME: Jackson's  
PROJECT NUMBER: 01173501-014  
WELL DESIGNATION: MW-13

PROJECT DATE: 5-26-06  
SAMPLER: \_\_\_\_\_  
SAMPLE NUMBER MW-13

**CONDITION OF WELL HEAD/VAULT/T/CAP & T/LOCK**

- A. TOP OF CASING ELEVATION  
B. DEPTH TO GROUNDWATER (initial)  $5.11$   
C. DEPTH OF WELL MEASURED 15  
D. HEIGHT OF WATER COLUMN (C-B)  $15 - 5.11 = 9.89$   
E. GROUNDWATER ELEVATION (A-B)

CASING DIAMETER: 2"  3"  4"  OTHER

CALCULATED WELL VOLUME: D<sub>x</sub>V = 9.89 X 163 = 1,619.5

A. Volume (V) of 2" wall = 0.163 gal/ft  
 B. Volume (V) of 4" wall = 0.653 gal/ft

ODOR no SHEEN no FLOATING PRODUCT THICKNESS yes

PUMP TYPE: POLY BAILEY  
ELECTRIC

STAINLESS BAILER \_\_\_\_\_  
OTHER

PUMP DEPTH:

#### RECHARGE RATE (qualitative):

SAMPLER TYPE: TEFLON BAILER      ACRYLIC BAILER      DISPOSABLE BAILER

SAMPLES COLLECTER: PRESERVED VOA'S \_\_\_\_\_ UNPRESERVED VOA'S \_\_\_\_\_  
PRESERVED LITERS \_\_\_\_\_ UNPRESERVED LITERS \_\_\_\_\_  
500ml PLASTIC BOTTLE WITH PRESERVATIVE FOR METALS:  
FILTERED \_\_\_\_\_ UNFILTERED \_\_\_\_\_ OTHER \_\_\_\_\_

COMMENTS \_\_\_\_\_